REMARKS

Claims 1-21 are pending in the application. Claims 1-21 are rejected. Claims 1, 3, 5, 7, 8, 10, 11, 13, 16, 19 and 21 have been amended. Claim 22 has been added.

Claim 1 has been amended to state that the converted starch is enzymatically prepared using at least two enzymes. Claims 3, 5, 8, 10, 11 and 13 have been amended to correct dependency. Claims 7, 13 and 21 have been amended to correct grammatical errors. Claim 16 has been amended to broaden the scope of the claim to a base starch enzymatically prepared using at least two enzymes. New claim 22 is directed to the improved viscosity aspect of the current invention, formerly part of claim 16.

No new matter is introduced by these amendments.

Reply to the Rejection of Claims 1-21 under 35 U.S.C. § 102(b)

The Examiner has rejected claims 1-21 as being anticipated by U.S. Patent No. 5,599,569 to Chiu *et al.* ("Chiu"). Specifically, the Examiner states –

> Chiu et al. teach a method of adhering seasonings to a food product by first coating the food product with a solution containing and effective amount of an amylase treated starch, the amylase treated starch is prepared by steam cooking starch, and enzymatically hydrolyzing the cooked starch with amylase in an amount and for a time sufficient to achieve a funnel viscosity measured at 19% solids using a standard funnel of 7 to 80 seconds and a dextrose equivalent (DE) of 2 to 40. [Note the abstract] The starch includes cereal or root starch or flour which includes materials such as maize, rice, barley, wheat, sorghum, tapioca, potato and waxy versions as well as their corresponding flours, converted, acid treated starch, chemically modified starch can also be used as the starting materials. The amylase treated starch is a coating, which reads directly on applicant's glaze containing a converted starch in an amount of 25-65% and having a funnel viscosity from about 7 to less than 20 seconds. Specifically the funnel viscosity is between 7-80 seconds and does overlap with applicant's 7 to less than 20 seconds. After coating the food item Chiu et al. teach then adhering thereon at least one seasoning, flavorant or colorant and drying the food product. Chiu et al. teach that the process can coat a number of food items which can include pastries, snack foods such as tortillas, bakery goods etc. The amylase treated starch coating used for adhering seasonings, flavorants or colorants on foods, fully anticipates applicant's method of glazing foods and glaze as claimed.

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 1-21 as being anticipated by Chiu.

Referring to Chiu, therein is disclosed the use of amylase-treated low-viscosity starches in foods. Any cereal or root starch or flour can be used as the base starch, as well as converted and chemically modified starches. (col. 1, line 65 – col. 2, line 5). The base starch is first cooked to completely gelatinize the starch (col. 2, lines 6-13). This fully gelatinized starch is then enzymatically hydrolyzed with an amylase enzyme (col. 2, lines 14-18). α-amylase, β-amylase or glucoamylase can be used (col. 2, lines 18-19). The resultant product has a dextrose equivalent (DE) of 2 to 40. The product is low in viscosity, high in tackiness when wet, and dries quickly (col. 3, lines 10-21). When prepared in solution, the solution concentration of the product binder is 5 to 50% (col. 3, lines 22-26).

In contrast to Chiu, the present invention is directed towards a method for glazing foods that involves applying to the food a glaze base containing a converted starch, as well as the process for preparing the converted starch. The converted starch is prepared by enzymatically hydrolyzing a base starch with at least two enzymes. Chiu only teaches or suggests the use of a single enzyme (see, *e.g.*, Examples 1 and 4). For at least these reasons, Chiu does not teach each and every element of the presently claimed invention and cannot be said to anticipate it.

Further, different enzymes have different actions resulting in different products. For example, the α-amylase family of enzymes catalyzes four types of hydrolysis or synthesis linkages in starch. These include (1) hydrolysis of α-1,4-glucosidic linkages (α-amylase (also β-amylase – see below)); (2) hydrolysis of α-1,6-glucosidic linkages (pullalanase); (3) transglycosylation to form α-1,4-glucosidic linkages (cyclodextrin glucanotransferase, or CGTase); and (4) transglycosylation to form α-1,6-glucosidic linkages (1,4-α-D-glucan:1,4-α-D-glucan 6-α-D-(1,4-α-D-glucano) transferase, or branching enzyme).

Although both α-amylase and β-amylase hydrolyze α-1,4 linkages, their actions on starch molecules are different. α-amylase is an endo-enzyme, *i.e.*, it hydrolyzes internal α-1,4 linkages in starch molecules. In contrast, β-amylase is an exo-enzyme, which removes two glucose units from the non-reducing end of starch molecules, producing maltose. The β-amylase's action is blocked from continuing when it encounters a branching point with α-1,6 linkage. Therefore, due to the above-mentioned variations between different enzymes, it would not be obvious to one skilled in the art to combine enzymes, nor would it be obvious whether a combination of

enzymes would result in a converted starch useful in glazing food products, specifically, a non-tacky food glaze.

It is believed that the above amendments and remarks overcome the Examiner's rejection of claims 1-21 as being anticipated by Chiu under 35 U.S.C. § 102(b). Withdrawal of the rejection is respectfully requested.

Based on the above amendments and remarks, allowance of the claims is believed to be in order, and such allowance is respectfully requested.

Respectfully submitted,

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